

REMARKS

In the Office Action, claims 1 and 4 were rejected under 35 U.S.C. §102(b) as being anticipated by Inoue (Japanese Patent No. 2001-332275). Claims 2 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in view of Chow et al. (WO 94/09520). Claims 3 and 6 were rejected under 35 U.S.C. §103(a) as being unpatentable over Inoue in view of Ishigaki et al. (JP 2000-356267).

In view of the Office Action, claims 1 to 3 have been amended and new claims 7 to 9 have been added.

Cited Document 1 (JP 2001-332275 A), Cited Document 2 (WO 94/09520 A), and Cited Document 3 (JP 2000-356267 A) neither disclose nor suggest the inventions specified in claims 1 to 3 and new claims 7 to 9.

A separator 1 for a fuel battery in accordance with the present invention comprises a separator main body 2 made of a mixture of carbon powder and a resin, and gasket 3 made of a high viscosity type rubber material and provided with lip portions 6, 8 on upper and lower surfaces. The gasket 3 is integrally formed in both surfaces 2a, 2b of the separator main body 2 by a high pressure injection molding process of the rubber material into the gasket forming grooves 10, 11. However, since the separator main body 2 is fragile, bottom walls

of the gasket forming grooves 10, 11 are likely to be punched out when the high viscosity type rubber is formed on the separator main body 2 by the high pressure injection molding process. In order to prevent such damage of the separator main body 2, the present invention applies the following measures to the shape of the gasket forming grooves 10, 11.

In amended claims 1 to 3, the gasket forming grooves 10, 11 are provided with a through hole 4 to communicate the grooves 10, 11 with each other. In claim 1, a groove width D of the one gasket forming groove 10 in the separator main body 2 is set to be wider than a groove width D of the other gasket forming groove 11. In claim 2, at least one of groove side surfaces 16, 17 in the gasket forming grooves 10, 11 is formed into an inclined shape. In claim 3, a curvature is provided in corner portions 14 of at least one of groove bottom surfaces in the gasket forming grooves 10, 11.

In new claims 7 to 9, the gasket forming grooves 10, 11 are not provided with the through hole 4. In new claim 7, a groove width D of the one gasket forming groove 10 in the separator main body 2 is set to be wider than a groove width d of the other gasket forming groove 11. In new claim 8, at least one of groove side surfaces 16, 17 in the gasket forming grooves 10, 11 is formed into

an inclined shape. In claim 9, a curvature is provided in corner portions 14 of at least one of groove bottom surfaces in the gasket forming grooves 10, 11.

Cited Document 1 (JP 2001-332275 A) discloses a gasket for a fuel battery in which a liquid rubber cured body 6 (corresponding to the gasket 3 of the present invention) is formed on upper and lower surfaces of a metal sheet 3 (corresponding to the separator main body 2 of the present invention). Since the metal sheet 3 is stronger than the separator main body 2 of the present invention, there is no possibility that the metal sheet 3 is subject to damages upon forming the liquid rubber cured body 6 on the upper and lower surfaces of the metal sheet 3. A through hole (8) in the metal sheet 3 serves to prevent the cured body 6 from coming out of the metal sheet 3. A lower part of the liquid rubber cured body 6 shown in Figures 12 and 14 in Document 1 is provided to prevent the cured body from being separated from the metal sheet 3. The lower part is not provided to prevent the separator main body 2 from being damaged. This will be apparent from the fact that the cured body 6 is not provided on the lower part with a seal portion 5 (corresponding to the lip portion 6 of the present invention).

Cited Document 2 (WO 94/09520 A) discloses a gasket apparatus including sheets 44, 50 provided with inclined grooves 60, 61, and gaskets 62, 63 fitted in the grooves 60, 61. However, the gaskets 62, 63 are previously formed

independently of the sheets 44, 50. The gaskets 62, 63 are not formed integrally on the sheets 44, 50 by an injection molding process.

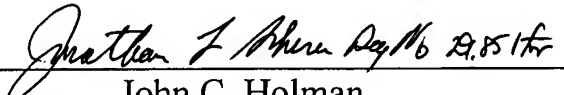
Cited Document 3 (JP 2000-356267 A) discloses a low load seal including a seal attaching member 2 provided with curved corners in a groove 3, and a seal 1 fitted in the groove 3. However, the seal 1 is previously formed independently of the seal attaching member 2. The seal 1 is not formed integrally on the seal attaching member 2 by an injection molding process.

Based on the foregoing amendments and remarks, it is respectfully submitted that the claims in the present application, as they now stand, patentably distinguish over the references cited and applied by the Examiner and are, therefore, in condition for allowance. A Notice of Allowance is in order, and such favorable action and reconsideration are respectfully requested.

However, if after reviewing the above amendments and remarks, the Examiner has any questions or comments, he is cordially invited to contact the undersigned attorneys.

Respectfully submitted,

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